

DISCUSSION OF THE AMENDMENT

Claim 1 has been amended by incorporating the subject matter of Claim 5 therein; Claim 5 has been canceled. Claim 6 has been amended into a method claim, dependent on Claim 7. Claim 7 has been amended by deleting the superfluous “the steps of”, by changing “if necessary” to --optionally--, and by incorporating the subject matter of Claim 5 therein. Claim 8 has been amended by incorporating the subject matter of Claim 11 therein; Claim 11 has been canceled. Claim 8 has been further amended to recite that the surface smoothing composition is different from the coating composition, as at least inferentially supported throughout the specification, and confirmed by, for example, the exemplified embodiments in Table 3 at page 53 of the specification. Claim 14 has been amended into a method claim, dependent on Claim 15. Claim 15 has been amended by deleting the superfluous “the steps of”, by changing “if necessary” to --optionally--, by reciting that the surface smoothing composition is different from the coating composition, and by incorporating the subject matter of Claim 11 therein. The claims have been further amended by changing “a” or “an” to --at least one-- with regard to the various components, as supported throughout the specification, such as page 8, lines 15-16; page 10, lines 13-14; etc. Finally, all improper multiple dependency has been eliminated.

No new matter is believed to have been added by the above amendment. Claims 1-4, 6-10 and 12-15 are now pending in the application.

REMARKS

The rejection of Claims 1, 2, and 7-10 under 35 U.S.C. § 102(b) as anticipated by U.S. 6,174,935 (Matsunae et al), is respectfully traversed. Matsunae et al discloses a dental adhesive kit comprising a combination of (i) a self-etching primer comprising (A) from 1.0 to 50% by weight of a methacrylate or acrylate having an acidic group and having at least one unsaturated double bond, (B) from 1.0 to 98% by weight of a water-soluble organic solvent, and (C) from 1.0 to 90% by weight of water; and (ii) a bonding agent comprising (D) from 10 to 90% by weight of a methacrylate or acrylate having neither acidic group nor hydroxyl group and having at least one unsaturated double bond, (E) from 10 to 90% by weight of a methacrylate or acrylate not having an acidic group but having a hydroxyl group and having at least one unsaturated double bond, (F) from 0.1 to 5.0% by weight of a photopolymerization initiator, (G) from 0.1 to 5.0% by weight of a photopolymerization accelerator, and (H) from 1.0 to 60% by weight of a filler (column 3, lines 6-25). Matsunae et al discloses further that the (meth)acrylate not having an acidic group but having a hydroxyl group and having at least one unsaturated bond can be contained in the self-etching primer (i), preferably in an amount of from 0.5 to 4.5% by weight (column 5, lines 59-67).

Matsunae et al neither anticipates nor otherwise renders the present claims unpatentable. Claims 1, 2 and 7 require that the surface smoothing composition have a viscosity at 30°C of 30 cP through 3,000 cP. Claims 8-10 require that the coating composition have a viscosity at 30°C of 300 cP through 50,000 cP. Matsunae et al discloses and suggests nothing with regard to the viscosity of their bonding agent. Indeed, with respect to their surface smoothing composition, Applicants disclose, in the specification at page 23, lines 10-13, that when the viscosity is lower than 30 cP, the flowability is so high that the composition may permeate into a space between adjacent teeth in the application to the teeth, and when it exceeds 3,000 cP, the coating property may be lowered. Additionally, with

regard to the coating compositions of Claims 8-10, Applicants describe in the specification at page 35, lines 16-19 that when the viscosity is lower than 300 cP, the flowability is so high that the operability may be lowered, and when it exceeds 50,000 cP, the coating property may be lowered so as to degrade uniformity in the color tone of the coating layer.

Claims 8-10 are separately patentable, because the claimed dental coating kit requires **three** components. In regard to these claims, the Examiner states that Applicants do “not specify within the claims the compositions are individual compositions, therefore the invention of the reference encompasses the instant claims.” In reply, since the claims are drawn to “a kit”, it necessarily follows that the recited compositions are “individual” compositions, i.e., separate from each other prior to use. Nevertheless, Claim 8 now explicitly recites what was at least implicit, i.e., that the surface smoothing composition is different from the coating composition.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 3 and 4 under 35 U.S.C. § 103(a) as unpatentable over Matsunae et al in view of EP 0173567 (Ying), is respectfully traversed. The Examiner relies on the disclosure in Ying of acylphosphine oxide and 2,4,6-trimethylbenzoyldiphenyl phosphine oxide as a photopolymerization initiator. However, even if the photopolymerization initiator of Ying were used as the photopolymerization initiator of Matsunae et al, the result would still not be the presently-claimed invention. Accordingly, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1-4, 7-10 and 15 under 35 U.S.C. § 103(a) as unpatentable over Ying in view of EP 0980682 (Nakatsuka et al), is respectfully traversed. In addition to what was discussed above with regard to Ying, Ying is drawn to a photopolymerizable dental composition comprising at least one olefinically unsaturated compound, a filler, and the above-discussed photopolymerization initiator. Nakatsuka et al discloses that a dental

bonding method of using a self-etching adhesive primer comprising, for example, an acidic monomer, a hydrophilic monomer and water that is applied to the tooth, after which a bonding material is applied directly thereto without washing and drying the primer-coated tooth, is known, but problematic ([0004]-[0005]). Nakatsuka et al's invention is drawn to an antibacterial primer comprising a specific antibacterial polymerizable monomer and a volatile solvent that is applied around the surface of a tooth and then dried spontaneously or through dental air blowing, after which an adhesive composition comprising an acid group-having polymerizable monomer, a polymerizable monomer and a polymerization initiator is applied to the area of the tooth and cured along with the antibacterial monomer previously applied thereto to form an antibacterial polymer layer having a high concentration at the interface between the tooth and the bonding material ([0017]), wherein the adhesive composition is composed of two compositions, one being an adhesive primer that comprises an acid group-having polymerizable monomer, a hydrophilic polymerizable monomer and water, and the other being a bonding agent that comprises a polymerizable monomer and a polymerization initiator, wherein the photopolymerization initiator in the bonding agent contains, *inter alia*, an acylphosphine oxide, and wherein the adhesive primer is first applied to a tooth and is cured along with the bonding agent ([0018]).

The Examiner finds that Ying differs from the present claims as not disclosing "a self-etching primer and a coating (bonding) composition applied to the teeth before applying the composition." The Examiner also appears to analogize the composition of Ying to the presently-recited surface smoothing composition. The Examiner thus relies on Nakatsuka et al. The Examiner holds that it would have been obvious to use the primer and adhesive composition of Nakatsuka et al before treating the teeth with the composition of Ying "motivated by the desire to avoid the washing of the etching solution and drying of the teeth

as well as to have better adhesion of the coating or composite material to the dentin or enamel disclosed by [Nakatsuka et al].”

In reply, it is not clear how the Examiner’s conclusion of obviousness follows from the combination of Ying and Nakatsuka et al. The **invention** of Ying is in the use of the acylphosphine oxide catalyst system compared to a prior art mixture of camphoroquinone and benzil (page 1, lines 28-30). Ying discloses further that his photopolymerizable composition is applied to a prepared tooth “in the customary way,” i.e., after being first preferably etched with an acid, and the tooth then rinsed and dried prior to application of the photopolymerizable composition (page 15, lines 1-13). Thus, it is not clear how one skilled in the art would view the technique of Nakatsuka et al as “customary.” Nevertheless, none of the applied prior art discloses or suggests the presently-recited viscosity limitation. Nor, with regard to Claim 8 and claims dependent thereon does the applied prior art disclose a kit containing three separate components as recited therein.

For all the above reasons, it is respectfully requested that this rejection be withdrawn.

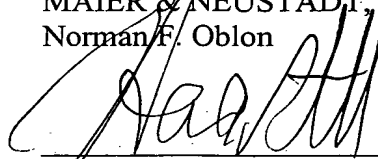
The objection to Claims 5-6 and 11-14 as being improper multiply dependent claims is now moot in view of the above-discussed amendment. Accordingly, it is respectfully requested that the objection be withdrawn.

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Applicants respectfully submit that all of the presently pending claims in this application are now in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

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A handwritten signature in dark ink, appearing to read 'Harris A. Pitlick', is written over a horizontal line.

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